In re TON ET AL., Application No. 09/776,794
Amendment A

Amendments to the Claims:

The listing of clams will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A method for dynamic allocation and management of semaphores for accessing shared resources, the method comprising:

maintaining a data structure indicating for each of a plurality of resources an allocated semaphore;

receiving a request to access a first resource from a first task; and

~~after~~ in response to determining that the first ~~resources~~ resource is available: allocating a first semaphore, ~~and~~ updating the data structure with indications of the first resource and ~~an indication of~~ the first ~~semaphore;~~ semaphore, and signaling to the first task that the first resource ~~request~~ is available.

Claim 2 (original): The method of claim 1, wherein said determining that the first resource is available includes checking the data structure for an indication of the first resource.

Claim 3 (currently amended): The method of claim 1, wherein said maintaining the data structure ~~further~~ includes maintaining a current access type for each of the plurality of resources.

Claim 4 (currently amended): The method of ~~claim 4~~ claim 3, wherein said determining that the first resource is available includes finding an indication of the first resource and an associated current access type of read in the data structure, and recognizing that the request corresponds to a read request.

Claim 5 (original): The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently not available, and signaling to the second task that the first resource is not available.

Claim 6 (original): The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently read-locked, recognizing that the second request corresponds to a read access request; and signaling to the second task that the first resource is available.

Claim 7 (original): The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently read-locked, recognizing that the second request corresponds to a write access request; and signaling to the second task that the first resource is not available.

Claim 8 (original): The method of claim 1, further comprising receiving a second request to access the first resource from a second task; referencing the data structure to determine that the first resource is currently write-locked, and signaling to the second task that the first resource is not available.

Claim 9 (currently amended): The method of claim 1, further comprising receiving a second request to access the first resource from a second task, the second request including a request timeout value; referencing the data structure to determine that the first resource is currently not available, queuing the second request, the first task releasing the first resource within a timeframe corresponding to the timeout value, and signaling to the second task that the first resource is not available.

Claim 10 (original): The method of claim 1, further comprising receiving a second request to access the first resource from a second task, the second request including a request timeout value; referencing the data structure to determine that the first resource is currently not available, queuing the second request, expiring the second request based on the timeout value, and signaling to the second task that the first resource is not available.

Claim 11 (cancelled)

Claim 12 (currently amended): A computer-readable medium containing computer-executable instructions for performing steps for dynamic allocation and management of semaphores for accessing shared resources, said steps comprising:

maintaining a data structure indicating for each of a plurality of resources an allocated semaphore;

receiving a first request to access a resource;

after determining that the resource is available: allocating a first semaphore, and updating the data structure with the resource and an indication of the first semaphore;

receiving a second request to access the resource; and

after determining whether or not that the ~~first~~ resource is available: allocating a second semaphore, and updating the data structure with the second semaphore.

Claim 13 (original): The computer-readable medium of claim 12, containing further computer-executable instructions for updating, after receiving a release request for the resource, the data structure to remove the indication of the first semaphore and to indicate that the resource is allocated with the second semaphore.

Claim 14 (original): The computer-readable medium of claim 12, wherein the first and second requests correspond to read access requests to the resource.

Claim 15 (original): The computer-readable medium of claim 12, wherein the first request corresponds to a read access and the second request correspond to a write access request to the resource.

Claim 16 (original): The computer-readable medium of claim 15, containing further computer-executable instructions for: receiving a third request from a task to access the resource, the third access corresponding to a read access request; updating the data structure with the resource and an indication of the third semaphore; and indicating to the task that read access is authorized.

Claims 17-24 (cancelled)

Claim 25 (new): An apparatus for dynamic allocation and management of semaphores for accessing shared resources, the apparatus comprising:

means for maintaining a data structure indicating for each of a plurality of resources an allocated semaphore;

means for receiving a request to access a first resource from a first task; and

means for in response to determining that the first resource is available: allocating a first semaphore, updating the data structure with indications of the first resource and the first semaphore, and signaling to the first task that the first resource is available.

Claim 26 (new): The apparatus of claim 25, wherein said means for determining that the first resource is available includes means for checking the data structure for an indication of the first resource.

Claim 27 (new): The apparatus of claim 25, wherein said maintaining the data structure includes maintaining a current access type for each of the plurality of resources.

Claim 28 (new): The apparatus of claim 27, wherein said means for determining that the first resource is available includes finding an indication of the first resource and an associated current access type of read in the data structure and recognizing that the request corresponds to a read request.

Claim 29 (new): The apparatus of claim 25, comprising means for receiving a second request to access the first resource from a second task; means for referencing the data structure to determine that the first resource is currently not available, and means for signaling to the second task that the first resource is not available.

Claim 30 (new): An apparatus for dynamic allocation and management of semaphores for accessing shared resources, the apparatus comprising:

means for maintaining a data structure indicating for each of a plurality of resources an allocated semaphore;

means for receiving a first request to access a resource;

means for in response to determining that the resource is available: allocating a first semaphore and updating the data structure with the resource and an indication of the first semaphore;

means for receiving a second request to access the resource; and

means for in response to determining whether or not that the resource is available: allocating a second semaphore and updating the data structure with the second semaphore.

Claim 31 (new): The apparatus of claim 12, including means for updating, after receiving a release request for the resource, the data structure to remove the indication of the first semaphore and to indicate that the resource is allocated with the second semaphore.

Claim 32 (new): The apparatus of claim 12, wherein the first and second requests correspond to read access requests to the resource.

Claim 33 (new): The apparatus of claim 12, wherein the first request corresponds to a read access and the second request correspond to a write access request to the resource.